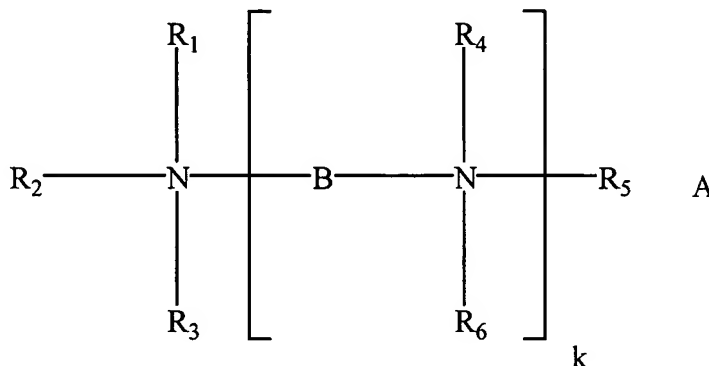


AMENDMENTS TO THE CLAIMS

The following listing of claims replaces the original set of claims:

1.-17. (CANCELED).

18. (NEW) A cationic cytofectin having the ability of intracellular delivery of exogenous compounds into cells, said cytofectin having the formula:



wherein,

A is chloride, bromide, iodide, hydrogen phosphate (HPO_4^{2-}), dihydrogen phosphate (H_2PO_4^-), sulfate, thiosulfate, hydroxy, or oxalate;

k is 1, 2, 3, 4 or 5;

B is the alkandiyl bridge $(\text{CH}_2)_n$, wherein n is 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10;

R_1 , R_3 , R_4 , are identical or different, and denote hydrogen, straight-chained or branched C_1 - C_6 -alkyl, C_1 - C_6 -alkenyl, or C_1 - C_6 -alkynyl;

R_2 is straight-chained or branched C_8 - C_{20} -alkyl, C_8 - C_{20} -alkenyl, or C_8 - C_{20} -alkynyl;

R_5 is, when $k=1$, straight-chained or branched C_8 - C_{20} -alkyl, C_8 - C_{20} -alkenyl, C_8 - C_{20} -alkynyl; and R_5 is, when $k > 1$, hydrogen, straight-chained or branched C_1 - C_6 -alkyl, C_1 - C_6 -alkenyl, C_1 - C_6 -alkynyl; and

R_6 is, when $k=1$, hydrogen, straight-chained or branched C_1 - C_6 -alkyl, C_1 - C_6 -alkenyl, C_1 - C_6 -alkynyl; and R_6 is, when $k > 1$, straight-chained or branched C_8 - C_{20} -alkyl, C_8 - C_{20} -alkenyl, C_8 - C_{20} -alkynyl, and the repeating unit $-B-\text{NR}_4\text{R}_6$ is identical to or different from one another.

19. (NEW) The cationic cytofectin according to claim 18, wherein
k is 1, 2, or 3;
n is 1, 2, 3, 4, 5, or 6;
R₁, R₃, R₄, are identical or different, and denote hydrogen, straight-chained or branched C₁-C₆-alkyl;
R₅ is, when k=1, straight chained or branched C₈-C₂₀-alkyl, C₈-C₂₀-alkenyl C₈-C₂₀-alkynyl, and R₅ is, when k > 1, hydrogen, straight-chained or branched C₁-C₆-alkyl;
and
R₆ is, when k=1, hydrogen, straight chained or branched C₁-C₆-alkyl, C₁-C₆-alkenyl, C₁-C₆-alkynyl, and R₆ is, when k > 1, straight-chained or branched C₈-C₂₀-alkyl, C₈-C₂₀-alkenyl, C₈-C₂₀-alkynyl, and the repeating unit -B-NR₄R₆ is identical to one another.
20. (NEW) The cationic cytofectin according to claim 18, wherein
A is bromide, iodide, dihydrogen phosphate (H₂PO₄⁻) or thiosulfate;
k is 1 or 2;
B is, when k=1, an alkandiyl bridge -(CH₂)_n, wherein n is 2, 3, or 4; and B is, when k=2, an ethylene bridge -(CH₂-CH₂)-;
R₁, R₃, R₄, are each CH₃;
R₂ is straight-chained C₁₀-C₂₀-alkyl;
R₅ is, when k=1, a straight-chained C₁₀-C₂₀-alkyl and is identical to R₂; and R₅ is, when k=2, a CH₃;
R₆ is, when k=1, a CH₃; and R₆ is, when k=2, straight-chained C₁₀-C₂₀-alkyl and is identical to R₂.
21. (NEW) The cationic cytofectin according to claims 18, 19, or 20, wherein the C₁-C₆-alkyl group is substituted with one or more halogens.
22. (NEW) The cationic cytofectin according to claim 21, wherein the halogen is fluorine.

23. (NEW) The cationic cytofectin according to claim 18, wherein the C₁-C₆-alkyl group is selected from the group consisting of methyl, ethyl, propyl, isopropyl, butyl, 1-methylpropyl, 2-methylpropyl, 1,1-dimethylethyl, n-pentyl, 1-methylbutyl, 2-methylbutyl, 3-methylbutyl, 1,1-dimethylpropyl, 1,2-dimethylpropyl, 2,2-dimethylpropyl, 1-ethylpropyl, hexyl, 1-methylpentyl, 2-methylpentyl, 3-methylpentyl, 4-methylpentyl, 1,1-dimethylbutyl, 1,2-dimethylbutyl, 1,3-dimethylbutyl, 2,2-dimethylbutyl, 2,3-dimethylbutyl, 3,3-dimethylbutyl, 1-ethylbutyl, 2-ethylbutyl, 1,1,2-trimethylpropyl, 1,2,2-trimethylpropyl, 1-ethyl-1-methylpropyl, and 1-ethyl-2-methyl-propyl.

24. (NEW) The cationic cytofectin according to claim 23, wherein the alkyl group is methyl, ethyl, n-propyl, or isopropyl.

25. (NEW) The cationic cytofectin according to claim 18, wherein the alkandiyl group is selected from the group consisting of methyl, ethyl, propyl, isopropyl, butyl, 1-methylpropyl, 2-methylpropyl, 1,1-dimethylethyl, n-pentyl, 1-methylbutyl, 2-methylbutyl, 3-methylbutyl, 1,1-dimethylpropyl, 1,2-dimethylpropyl, 2,2-dimethylpropyl, 1-ethylpropyl, hexyl, 1-methylpentyl, 2-methylpentyl, 3-methylpentyl, 4-methylpentyl, 1,1-dimethylbutyl, 1,2-dimethylbutyl, 1,3-dimethylbutyl, 2,2-dimethylbutyl, 2,3-dimethylbutyl, 3,3-dimethylbutyl, 1-ethylbutyl, 2-ethylbutyl, 1,1,2-trimethylpropyl, 1,2,2-trimethylpropyl, 1-ethyl-1-methylpropyl, and 1-ethyl-2-methyl-propyl.

26. (NEW) The cationic cytofectin according to claim 25, wherein the alkandiyl group is methyl, ethyl, n-propyl, or isopropyl.

27. (NEW) The cationic cytofectin according to claim 18, wherein C₈-C₂₀-alkyl is selected from the group consisting of octyl, decyl, undecyl, dodecyl, tridecyl, tetradecyl, pentadecyl, hexadecyl, heptadecyl, dodecadecyl, nonadecyl, and eicosyl.

28. (NEW) The cationic cytofectin according to claim 18, wherein the alkenyl group is selected from the group consisting of 2-propenyl, 2-butenyl, 3-butenyl, 1-methyl-2-propenyl, 2-methyl-2-propenyl, 2-pentenyl, 3-pentenyl, 4-pentenyl, 1-methyl-2-butenyl, 2-methyl-2-butenyl, 3-methyl-2-butenyl, 1-methyl-3-butenyl, 2-methyl-3-butenyl, 3-methyl-3-butenyl, 1,1-dimethyl-2-propenyl, 1,2-dimethyl-2-propenyl, 1-ethyl-2-propenyl, 2-hexenyl, 3-hexenyl, 4-hexenyl, 5-

hexenyl, 1-methyl-2-pentenyl, 2-methyl-2-pentenyl, 3-methyl-2-pentenyl, 4-methyl-2-pentenyl, 1-methyl-3-pentenyl, 2-methyl-3-pentenyl, 3-methyl-3-pentenyl, 4-methyl-3-pentenyl, 1-methyl-4-pentenyl, 3-methyl-4-pentenyl, 4-methyl-4-pentenyl, 1,1-dimethyl-2-butenyl, 1,1-dimethyl-3-butenyl, 1,2-dimethyl-2-butenyl, 1,2-dimethyl-3-butenyl, 1,3-dimethyl-2-butenyl, 1,3-dimethyl-3-butenyl, 2,2-dimethyl-3-butenyl, 2,3-dimethyl-2-butenyl, 2,3-dimethyl-3-butenyl, 1-ethyl-2-butenyl, 1-ethyl-3-butenyl, 2-ethyl-1-butenyl, 2-ethyl-2-butenyl, 2-ethyl-3-butenyl, 1,1,2,-trimethyl-2-propenyl, 1-ethyl-1-methyl-2-propenyl, and 1-ethyl-2-methyl-2-propenyl.

29. (NEW) The cationic cytofectin according to claim 28, wherein the alkyl group is 2-propenyl.

30. (NEW) The cationic cytofectin according to claim 18, wherein the alkynyl group is selected from the group consisting of 2-propynyl, 2-butylnyl, 3-butylnyl, 2-pentylnyl, 3-pentylnyl, 4-pentylnyl, 3-methyl-2-butylnyl, 2-hexynyl, 3-hexynyl, 4-hexynyl, 5-hexynyl, 3-methyl-2-pentylnyl, 4-methyl-2-pentylnyl, 2-methyl-3-pentylnyl, 4-methyl-3-pentylnyl, 1-methyl-4-pentylnyl, 1,1-dimethyl-2-butylnyl, 1,1-dimethyl-2-pentylnyl, 1,1-dimethyl-3-butylnyl, 1,2-dimethyl-3-butylnyl, 1,3-dimethyl-2-butylnyl, 2,2-dimethyl-3-butylnyl, 1-ethyl-2-butylnyl, 1-ethyl-3-butylnyl, 2-ethyl-3-butylnyl, and 1-ethyl-1-methyl-2-propynyl.

31. (NEW) The cationic cytofectin according to claim 30, wherein the alkynyl group is 2-propynyl.

32. (NEW) The cationic cytofectin according to claim 18 selected from the group consisting of:

N,N',N''-trioctyl-N,N,N',N'',N''-pentamethyl-bis-(2-ammonioethyl)-ammonium bromide;
 N,N',N''-tridecyl-N,N,N',N'',N''-pentamethyl-bis-(2-ammonioethyl)-ammonium bromide;
 N,N',N''-tridodecyl-N,N,N',N'',N''-pentamethyl-bis-(2-ammonioethyl)-ammonium bromide;
 N,N',N''-tritradecyl-N,N,N',N'',N''-pentamethyl-bis-(2-ammonioethyl)-ammonium bromide;
 N,N',N''-trihexadecyl-N,N,N',N'',N''-pentamethyl-bis-(2-ammonioethyl)-ammonium bromide;
 N,N',N''-trioctadecyl-N,N,N',N'',N''-pentamethyl-bis-(2-ammonioethyl)-ammonium bromide;
 ethanediyl-1,2-bis(dimethyldecyl ammonium chloride); ethanediyl-1,2-bis(dimethyldecyl ammonium iodide); ethanediyl-1,2-bis(dimethyldecyl ammonium dihydrogenphosphate); ethanediyl-1,2-bis(dimethyldecyl ammonium thiosulfate); ethanediyl-1,2-bis(dimethyldecyl

ammonium sulfate); ethanediyl-1,2-bis(dimethyldecyl ammonium oxalate); ethanediyl-1,2-bis(decyl dimethyl ammonium bromide); ethanediyl-1,2-bis(dodecyl dimethyl ammonium bromide); ethanediyl-1,2-bis(tetradecyl dimethyl ammonium bromide); ethanediyl-1,2-bis(hexadecyl dimethyl ammonium bromide); ethanediyl-1,2-bis(octadecyl dimethyl ammonium bromide); propanediyl-1,3-bis(decyl dimethyl ammonium bromide); butanediyl-1,4-bis(decyl dimethyl ammonium bromide); and butanediyl-1,4-bis(octadecyl dimethylammonium bromide).